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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,780	01/17/2006	Tomoko Morita	108420-00054	3647
4372	7590	09/12/2008		
ARENT FOX LLP 1050 CONNECTICUT AVENUE, N.W. SUITE 400 WASHINGTON, DC 20036			EXAMINER YOUNG, NATASHA E	
			ART UNIT	PAPER NUMBER
			1797	
			NOTIFICATION DATE	DELIVERY MODE
			09/12/2008	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DCIPDocket@arentfox.com  
IPMatters@arentfox.com  
Patent\_Mail@arentfox.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/564,780	<b>Applicant(s)</b> MORITA ET AL.	
	<b>Examiner</b> NATASHA YOUNG	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>01/17/2006</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The information disclosure statement filed January 17, 2006 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because four of the five foreign references were not provided in hardcopy. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

The four missing foreign references have been cited on the attached "Notice of References Cited" form.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct

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from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-5 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6 of U.S. Patent No. 7,162,863 B2 in view of Hanaki et al (US 2001/0004832 A1).

Regarding claim 1, Suzuki et al (U.S. Patent 7,162,862 B2) claims an exhaust gas purifying apparatus for an internal combustion engine having: NOx removing means provided in an exhaust system of said engine, for adsorbing NOx in exhaust gases from said engine when exhaust gases are in an oxidizing state, said NOx removing means

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reducing the adsorbed NO<sub>x</sub> to generate ammonia and retaining the generated ammonia when the exhaust gases are in a reducing state.

Suzuki et al does not claim reforming means provided upstream of said NO<sub>x</sub> removing means, for reforming reducing components in the exhaust gases to hydrogen when the exhaust gases are in the reducing state; and fuel adding means for adding fuel to the exhaust gases which flow into said reforming means.

Hanaki et al discloses reforming means provided upstream of said NO<sub>x</sub> removing means, for reforming reducing components in the exhaust gases to hydrogen when the exhaust gases are in the reducing state; and fuel adding means for adding fuel to the exhaust gases which flow into said reforming means (see paragraphs 0022, 0031-0033, and 0052 and figure 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the claims of Suzuki et al with the teachings of Hanaki et al such that reforming means provided upstream of said NO<sub>x</sub> removing means, for reforming reducing components in the exhaust gases to hydrogen when the exhaust gases are in the reducing state; and fuel adding means for adding fuel to the exhaust gases which flow into said reforming means in order to more effectively remove NO<sub>x</sub>, HC, and CO (see Hanaki et al paragraph 0022).

Regarding claims 2-5, Suzuki et al does not claim an exhaust gas purifying apparatus wherein said reforming means is a reforming catalyst; wherein said reforming means is a partial oxidation catalyst; wherein said reforming means contains at least rhodium; and wherein said reforming means is a three-way catalyst.

Hanaki et al discloses an exhaust gas purifying apparatus wherein said reforming means is a reforming catalyst; wherein said reforming means is a partial oxidation catalyst; wherein said reforming means contains at least rhodium; and wherein said reforming means is a three-way catalyst (see Abstract; paragraphs 0037 and 0052; and figure 1).

Claims 1-5 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 of copending Application No. 11/311264 in view of Hanaki et al (US 2001/0004832 A1).

Regarding claim 1, Morita et al (Application No. 11/311264) claims an exhaust gas purifying apparatus for an internal combustion engine having: NOx removing means provided in an exhaust system of said engine, for adsorbing NOx in exhaust gases from said engine when exhaust gases are in an oxidizing state, said NOx removing means reducing the adsorbed NOx to generate ammonia and retaining the generated ammonia when the exhaust gases are in a reducing state.

Morita et al does not claim reforming means provided upstream of said NOx removing means, for reforming reducing components in the exhaust gases to hydrogen when the exhaust gases are in the reducing state; and fuel adding means for adding fuel to the exhaust gases which flow into said reforming means.

Hanaki et al discloses reforming means provided upstream of said NOx removing means, for reforming reducing components in the exhaust gases to hydrogen when the exhaust gases are in the reducing state; and fuel adding means for adding fuel to the

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exhaust gases which flow into said reforming means (see paragraphs 0022, 0031-0033, and 0052 and figure 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the claims of Morita et al with the teachings of Hanaki et al such that reforming means provided upstream of said NOx removing means, for reforming reducing components in the exhaust gases to hydrogen when the exhaust gases are in the reducing state; and fuel adding means for adding fuel to the exhaust gases which flow into said reforming means in order to more effectively remove NOx, HC, and CO (see Hanaki et al paragraph 0022).

Regarding claims 2-5, Morita et al does not disclose an exhaust gas purifying apparatus wherein said reforming means is a reforming catalyst; wherein said reforming means is a partial oxidation catalyst; wherein said reforming means contains at least rhodium; and wherein said reforming means is a three-way catalyst.

Hanaki et al discloses an exhaust gas purifying apparatus wherein said reforming means is a reforming catalyst; wherein said reforming means is a partial oxidation catalyst; wherein said reforming means contains at least rhodium; and wherein said reforming means is a three-way catalyst (see Abstract; paragraphs 0037 and 0052; and figure 1).

This is a provisional obviousness-type double patenting rejection.

Claims 1-5 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-7 of copending Application No. 11/046817 in view of Hanaki et al (US 2001/0004832 A1).

Regarding claim 1, Wada et al (Application No. 11/046817) claims an exhaust gas purifying apparatus for an internal combustion engine having: NOx removing means provided in an exhaust system of said engine, for adsorbing NOx in exhaust gases from said engine when exhaust gases are in an oxidizing state, said NOx removing means reducing the adsorbed NOx to generate ammonia and retaining the generated ammonia when the exhaust gases are in a reducing state.

Wada et al does not claim reforming means provided upstream of said NOx removing means, for reforming reducing components in the exhaust gases to hydrogen when the exhaust gases are in the reducing state; and fuel adding means for adding fuel to the exhaust gases which flow into said reforming means.

Hanaki et al discloses reforming means provided upstream of said NOx removing means, for reforming reducing components in the exhaust gases to hydrogen when the exhaust gases are in the reducing state; and fuel adding means for adding fuel to the exhaust gases which flow into said reforming means (see paragraphs 0022, 0031-0033, and 0052 and figure 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the claims of Wada et al with the teachings of Hanaki et al such that reforming means provided upstream of said NOx removing means, for reforming reducing components in the exhaust gases to hydrogen when the exhaust gases are in the reducing state; and fuel adding means for adding fuel to the exhaust gases which flow into said reforming means in order to more effectively remove NOx, HC, and CO (see Hanaki et al paragraph 0022).



Regarding claims 2-5, Wada et al does not claim an exhaust gas purifying apparatus wherein said reforming means is a reforming catalyst; wherein said reforming means is a partial oxidation catalyst; wherein said reforming means contains at least rhodium; and wherein said reforming means is a three-way catalyst.

Hanaki et al discloses an exhaust gas purifying apparatus wherein said reforming means is a reforming catalyst; wherein said reforming means is a partial oxidation catalyst; wherein said reforming means contains at least rhodium; and wherein said reforming means is a three-way catalyst (see Abstract; paragraphs 0037 and 0052; and figure 1).

This is a provisional obviousness-type double patenting rejection.

Claims 1-5 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 of copending Application No. 11/905443 in view of Hanaki et al (US 2001/0004832 A1).

Regarding claim 1, Haga et al (Application No. 11/905443) claims an exhaust gas purifying apparatus for an internal combustion engine having: NOx removing means provided in an exhaust system of said engine, for adsorbing NOx in exhaust gases from said engine when exhaust gases are in an oxidizing state, said NOx removing means reducing the adsorbed NOx to generate ammonia and retaining the generated ammonia when the exhaust gases are in a reducing state.

Haga et al does not claim reforming means provided upstream of said NOx removing means, for reforming reducing components in the exhaust gases to hydrogen

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when the exhaust gases are in the reducing state; and fuel adding means for adding fuel to the exhaust gases which flow into said reforming means.

Hanaki et al discloses reforming means provided upstream of said NO<sub>x</sub> removing means, for reforming reducing components in the exhaust gases to hydrogen when the exhaust gases are in the reducing state; and fuel adding means for adding fuel to the exhaust gases which flow into said reforming means (see paragraphs 0022, 0031-0033, and 0052 and figure 1).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the claims of Haga et al with the teachings of Hanaki et al such that reforming means provided upstream of said NO<sub>x</sub> removing means, for reforming reducing components in the exhaust gases to hydrogen when the exhaust gases are in the reducing state; and fuel adding means for adding fuel to the exhaust gases which flow into said reforming means in order to more effectively remove NO<sub>x</sub>, HC, and CO (see Hanaki et al paragraph 0022).

Regarding claims 2-5, Haga et al does not claim an exhaust gas purifying apparatus wherein said reforming means is a reforming catalyst; wherein said reforming means is a partial oxidation catalyst; wherein said reforming means contains at least rhodium; and wherein said reforming means is a three-way catalyst.

Hanaki et al discloses an exhaust gas purifying apparatus wherein said reforming means is a reforming catalyst; wherein said reforming means is a partial oxidation catalyst; wherein said reforming means contains at least rhodium; and wherein said

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reforming means is a three-way catalyst (see Abstract; paragraphs 0037 and 0052; and figure 1).

This is a provisional obviousness-type double patenting rejection.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Hanaki et al (US 2001/0004832 A1).

Regarding claim 1, Hanaki et al discloses an exhaust gas purifying apparatus for an internal combustion engine having: NOx removing means provided in an exhaust system of said engine, for adsorbing NOx in exhaust gases from said engine when exhaust gases are in an oxidizing state, said NOx removing means reducing the adsorbed NOx to generate ammonia and retaining the generated ammonia when the exhaust gases are in a reducing state; reforming means provided upstream of said NOx removing means, for reforming reducing components in the exhaust gases to hydrogen when the exhaust gases are in the reducing state; and fuel adding means for adding fuel to the exhaust gases which flow into said reforming means (see paragraphs 0017, 0021-0022, 0030-0033 and 0052 and figure 1).

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Regarding claims 2-5, Hanaki et al discloses an exhaust gas purifying apparatus wherein said reforming means is a reforming catalyst; wherein said reforming means is a partial oxidation catalyst; wherein said reforming means contains at least rhodium; and wherein said reforming means is a three-way catalyst (see Abstract; paragraphs 0037 and 0052; and figure 1).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See Hashimoto et al (US 2001/0028868 A1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NATASHA YOUNG whose telephone number is (571)270-3163. The examiner can normally be reached on Mon-Thurs 7:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/NY/

/Walter D. Griffin/  
Supervisory Patent Examiner, Art Unit 1797